Patent
Attorney Docket: 266/185

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Carl F. Edman, et al.**	**Group Art Unit:** Not Assigned
Serial No.: Not Assigned	**Examiner:** Not Assigned
Filed: Herewith	
For: ELECTRONICALLY MEDIATED NUCLEIC ACID AMPLIFICATION IN NASBA	

PRELIMINARY AMENDMENT

BOX PATENT APPLICATION
Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to the examination hereof, please amend the subject application as follows:

IN THE SPECIFICATION:

After the title, please enter the following paragraph:

-- This application is a continuation of co-pending U.S. Patent Application Serial Number 09/290,338, filed on April 12, 1999. --

OC-94039.1

CERTIFICATE OF MAILING (37 C.F.R. §1.10)

I hereby certify that this paper (along with any referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as 'Express Mail Post Office To Addressee' in an envelope addressed to the Commissioner for Patents, Washington, D.C. 20231.

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Micheal A. Smith

IN THE CLAIMS:

Please cancel claims 1-26.

Please add new claims 27- 56:

27. A method for the amplification of one or more target nucleic acids of interest in at least two samples using a bioelectronic microchip comprising:

a) introducing the target nucleic acids of a first sample onto a bioelectronic microchip having a plurality of electronically addressable capture sites;

b) electronically addressing the target nucleic acids of the first sample to at least a first capture site which has anchored thereto at least a first oligonucleotide primer/probe comprising a capture sequence specific for one of the target nucleic acids to be amplified;

c) hybridizing the target nucleic acid of the first sample to the first oligonucleotide primer/probe at the first capture site;

d) removing any unhybridized nucleic acids of the first sample from the bioelectronic microchip.

e) hybridizing target nucleic acids from at least one additional sample to the first oligonucleotide primer/probe on at least one additional capture site by, for each additional sample:

i) introducing the target nucleic acids of the additional sample onto the bioelectronic microchip;

ii) electronically addressing the target nucleic acids of the additional sample to at least one additional capture site which has anchored thereto the first oligonucleotide primer/probe, wherein the target nucleic acids of the additional sample are addressed to capture sites different than capture sites to which the first or any other additional sample's nucleic acids are addressed;

iii) hybridizing the target nucleic acid of the additional sample to the first oligonucleotide primer/probe at the additional capture site;

iv) removing any unhybridized nucleic acids of the additional sample from the bioelectronic microchip;

f) contacting the hybridized target nucleic acids of the samples with enzymes and reagents necessary to support nucleic acid amplification, including any additional primers or probes;

g) amplifying the target nucleic acid utilizing at least one anchored amplification primer/probe to produce anchored amplicon species;

wherein the target nucleic acids from each sample are independently amplified at each capture site to which they are addressed so that the target nucleic acids from each sample are not significantly amplified at capture sites to which they are not addressed, and further wherein anchored amplicons of the same nucleic acid sequence are produced at different capture sites for target nucleic acids from at least two samples.

28. The method of claim 27 wherein the target nucleic acids from at least one sample are addressed to more than one capture site.

29. The method of claim 27 wherein a plurality of target nucleic acids for each sample are addressed, hybridized, and amplified.

30. The method of claim 29 wherein at least three target nucleic acids for each sample are addressed, hybridized, and amplified.

31. The method of claim 29 wherein at least four target nucleic acids for each sample are addressed, hybridized, and amplified.

32. The method of claim 29 wherein at least two target nucleic acids which are amplified in each sample are amplified at different capture sites.

33. The method of claim 29 wherein at least two target nucleic acids which are amplified in each sample are amplified at the same capture site.

34. The method of claim 27 wherein the anchored amplification primer/probe in step (g) is the same as the first oligonucleotide primer/probe.

35. The method of claim 27 wherein the amplification in step (g) is by an isothermal amplification process.

36. The method of claim 27 wherein the amplification in step (g) is by Nucleic Acid Sequence Based Amplification (NASBA).

37. The method of claim 36 wherein the anchored amplification primer/probe in step (g) comprises an RNA polymerase recognition sequence.

38. The method of claim 27, further comprising an electronic washing step before step (f).

39. The method of claim 27, further comprising the passing of a sufficient negative charge through the electrodes associated with the capture sites to remove mis-matched hybridized target nucleic acids after the hybridization of the target nucleic acids from each sample with the first oligonucleotide primer/probe at the capture sites.

40. The method of claim 39 wherein the passing of a sufficient negative charge is performed after each hybridization of target nucleic acids from a sample to the capture sites to which that sample is addressed.

41. The method of claim 39 wherein the passing of a sufficient negative charge is performed at the same time for the hybridized target nucleic acids of at least two samples.

42. The method of claim 27 wherein at least a portion of the amplicons produced are anchored to the capture sites.

43. The method of claim 27, further comprising a step (h) detecting at least one amplicon species.

44. The method of claim 43 wherein the detection in step (h) is by hybridization of a labeled oligonucleotide probe to the amplicon species.

45. The method of claim 44 wherein the probe is labeled with a labeling moiety selected from the group consisting of fluorescent moieties, chemiluminescent moieties, and electrochemiluminescent moieties.

46. The method of claim 45 wherein the labeling moiety is a fluorescent moiety selected from the group consisting of Bodipy-derivatives, Cyanine-derivatives, fluorescein-derivatives and rhodamine-derivatives.

47. The method of claim 44, further comprising the step of thermally denaturing any double stranded amplicon species after step (g).

48. The method of claim 44, further comprising the step of electronically denaturing any double stranded amplicon species after step (g).

49. The method of claim 43 wherein the detection in step (h) is by staining with ethidium bromide.

50. The method of claim 43 wherein the detection in step (h) is by the incorporation of a labeled nucleotide into the amplicon.

51. The method of claim 50 wherein the nucleotide is labeled with a labeling moiety selected from the group consisting of fluorescent moieties, chemiluminescent moieties, and electrochemiluminescent moieties.

52. The method of claim 51 wherein the labeling moiety is a fluorescent moiety selected from the group consisting of Bodipy-derivatives, Cyanine-derivatives, fluorescein-derivatives and rhodamine-derivatives.

53. The method of claim 43 wherein the detection in step (h) occurs simultaneously with the amplification of the target nucleic acid.

54. The method of claim 27 wherein the first oligonucleotide primer/probe is anchored to the first and additional capture sites through a biotin/streptavidin interaction.

55. The method of claim 27 wherein the first oligonucleotide primer/probe is anchored to the first and additional capture sites through a covalent linkage.

56. The method of claim 27 wherein the first and additional capture sites have at least one additional primer anchored to the capture sites.

STATEMENT UNDER 37 CFR 1.821(e)

The paper copy of the Sequence Listing in this application is identical to the computer readable copy of the Sequence Listing filed in application number 09/290,338, filed on April 12, 1999.

In accordance with 37 CFR 1.821(e), please use the last filed computer readable form filed in that application as the computer readable form for the instant application. It is understood that the Patent and Trademark Office will make the necessary change in application number and filing date for the instant application.

Respectfully submitted,

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Dated: October 9, 2001

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